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SEARCHED

ART UNIT PAPER NUMBER

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Please find below a communication from the EXAMINER in charge of this application.

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GROUP 1500

Paper No. 12

Serial Number: 08/120,105

Filing Date: 1505

Appellant(s): Winter

John M. Genova
For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed January 18, 1996.

(1) Real Party in Interest

The brief does not contain a statement identifying the Real Party in Interest. Therefore, it is presumed that the party named in the caption of the brief is the Real Party in Interest, i.e., the owner at the time the brief was filed. The Board, however, may exercise its discretion to require an explicit statement as to the Real party in interest.

(2) Related Appeals and Interferences

The brief does not contain a statement identifying any related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

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(1) *Status of claims.*

The statement of the status of claims contained in the brief is correct.

This appeal involves claims 7, 18, 12 and 15.

(2) *Status of Amendments After Final.*

No amendment after final has been filed.

(3) *Summary of invention.*

The summary of invention contained in the brief is correct.

(4) *Issues.*

The appellant's statement of the issues in the brief is correct.

(5) *Grouping of claims.*

Appellants brief contains a statement that all of the claims on appeal (claims 7, 8, 12 and 15) stand or fall together.

(6) *Claims appealed.*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(7) *Prior Art of record.*

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

Number	Name	Date
EP-0310734	(EP '734) Fina	4/89
EP-0128046	(EP '046) Exxon	12/84
EP-0351189	(EP '189) Sumitomo	1/90

WO 90/03414

(WO '414) Exxon

4/90

(8) *New prior art.*

No new prior art has been applied in this examiner's answer.

(9) *Grounds of rejection.*

The following ground(s) of rejection are applicable to the appealed claims.

Claims 7, 8, 12 and 15 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over EP '734.

Claims 7, 8, 12 and 15 are rejected under 35 U.S.C. § 103 as being unpatentable over EP '046 and WO '414, optionally further taken with EP '189.

Appellants claim 12 calls for a process for preparing a polyolefin molding composition having a broad melting range wherein the melting range maximum is between 120° and 165°C and wherein the process comprises direct polymerization of at least two polyolefins of different melting points, where the melting points must differ by at least 5°C, in the presence of a catalyst which comprises at least two metallocenes and an aluminoxane.

Claim 12 further sets out melting parameters of the product indicative of a broad melting range, the particular metallocenes which are to be employed, a polymerization temperature range of from -60 to 200°C and pressure range of from 0.5 to 100 bar and

that the polymerization may be conducted in solution, in suspension or in the gas phase.

EP 0310734 (EP '734) discloses a process for preparing a polyolefin composition (e.g., propylene polymer) in the presence of at least two different metallocene catalysts and an aluminoxane. The metallocene catalysts systems are within the scope of those set out in appellants claim 12, and other broadly recited polymerization process conditions, e.g., temperature and pressure, are considered within the scope of the reference or to be obvious thereover. The substantive process conditions set out in EP '734 would appear to be substantially the same as in appellants claim 12, however appellants contend that other limitations pertaining to the melting points of the polyolefins are not disclosed in EP '074.

In particular appellants rely on the claim limitation that the claimed process requires the direct polymerization of at least two polyolefins of different melting points where the melting points must differ by at least 5°C, which is discussed, e.g., at page 3 of the specification and was also set out in original claim 5. Looking at working examples in appellants specification in which separately prepared polymers are blended and those in which the product prepared by direct polymerization in the presence of two different catalyst is separated into two constituent polymers, it can be seen that the separate polymers

and the constituent polymers in case of direct polymerization did have a melting point difference of at least 5°C, but the resulting product was characterized by a melting range maximum which is between the two constituent polymers or separate polymers and only a single value. From this it would appear that the claimed difference in melting points of at least 5°C refers to the separate constituent polymers, and since in Example 7 of EP '734, two different metallocenes were employed within the scope of appellants' claims with each catalyst separately preparing constituent polymers which differ in melting points by 5°C (Examples B and D), it is considered that such process would be within the scope of appellants' claims in that regard. The melting point of the total polymer in Ex. 7 of EP '734 is within the claimed melting maximum range; and appellants other claimed melting point limitations, e.g., pertaining to melting peak height and width, are considered to follow from the melting point difference which would give rise to a broad melting range. Appellants other arguments pertaining to melting point characteristics of the total polymer are not set out in the claims. It is further noted that in Examples 1-3 of EP '734 the polymer product had a melting point within the range of the constituent polymers or similar to that of the higher melting constituent polymer.

EP '046 discloses the production of polyolefin, e.g., E polymer, compositions utilizing a catalyst system comprising at least two different metallocene catalyst, e.g., containing a Group 4 or 6 metal which includes Zr, Ti, and Hf, and aluminoxane. The reference teaches that the reactor blends can yield mixtures of polymers having different properties such as MP°, mol. wt., density, comonomer content, etc., and the Examples illustrate blends containing PE and E/P copolymer.

WO '414 teaches the preparation of polyolefin polymer mixtures comprising E polymers which are prepared with aluminoxane-metallocene catalyst systems such as employed by applicants, wherein the blends can be prepared by direct polymerization in a single reactor using two or more catalyst or by blending separately prepared E polymers. The E polymer blend components have, e.g., different mol. wt. and/or comonomer contents; in the Examples in the Tables a number of blends are disclosed wherein the E polymers have different comonomer contents or density ranges including blends of E homopolymer and E-alpha olefin copolymer (see, e.g., Blend B1, B2 and blends 20 and 21 in Table 4). Though WO '414 does not specifically disclose the melting points of the different E polymers, it is well known in the art that higher comonomer contents correspond to lower densities and melting points for the E polymer.

In this regard note the disclosure of EP '189 which also discloses blends of E polymers having different comonomer contents, densities and melting points, the reference being concerned with providing mixtures of E polymers having different melting points for the manufacture of films. Note the DSC melting points for the E copolymers and higher density polyethylene in Table 1 and Table 2, page 14. It can be seen that the higher density PE has a much higher melting point than the E copolymer, the HDPE having a melting point of about 132 to about 136 and the mixtures having maximum melting peaks within the claimed range. It is considered that the polymer blends described within the scope of WO '414 (e.g., PE and E copolymer) would inherently have a broad melting range so as to be within the scope of applicants composition, and the teachings in the Kamisky publication further support that E polymers prepared with Ziegler metallocene catalyst likewise have melting points which vary in similar fashion with comonomer contents.

Since WO '414 teaches that the polymer blends can be prepared with the use of two metallocene catalyst systems in one reactor and EP '046 specifically teaches the actual preparation of similar polymer blends using two different metallocenes, it would be obvious to prepare the blends disclosed in WO '414 in such fashion, and as discussed above the blends of, e.g., HDPE and E-alpha olefin copolymer disclosed in WO '414 are deemed to

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include polymer mixtures having a broad melting point range and a melting range maximum within the scope of appellants composition produced by the claimed process.

(10) *New ground of rejection.*

This Examiner's Answer does not contain any new ground of rejection.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

(Carman) Seccuro
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PRIMARY EXAMINER
GROUP 150

Seccuro:css
April 25, 1996

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